+DEPARTMENT OF TRANSPORTATION U.S. COAST GUARD CG-3303C-16 (Rev. 12-99)

RECORD OF PERFORMANCE QUALIFICATIONS

MK

INSTRUCTIONS

Record of Performance Qualifications shall be completed for enlisted personnel of the Coast Guard and Coast Guard Reserve as outlined in the Enlisted Qualifications Manual (COMDTINST M1414.8, series). As proficiency in each performance qualification is demonstrated, the DATE and INITIALS column shall be completed. Personnel are required to demonstrate proficiency in all new qualifications assigned to their rating. Qualifications previously demonstrated, dated and initialed off will not be recertified.

Prior to commencement of ADT, the member's Reserve Unit shall indicate, by circling in red, those qualifications which cannot be completed during inactive duty and should be completed on ADT.

RATING		ABBREVIATION
Machinery Technician (Rev. 12-	99 – effective for Nov 2000 SWE) MK
DATE COMPLETED ALL PERFORMANCE	QUALIFICATIONS FOR RATE LEVEL	
E-4	E-5	E-6
E-7 NAME (Last, First, Middle Initial)	E-8	E-9 SOCIAL SECURITY NUMBER
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	SIGNATURE OF SUPERVISOR			
DATE	NAME/SIGNATURE	INITIALS	RATE	UNIT
REMARKS				

RATING: Machinery Technician	INIT	DATE
A. ADMINISTRATION		
4.01 Locate information within the following publications; a. Naval Engineering Manual, COMDTINST M9000.6 (series) b. Preventing Maintenance Manuals, Unit specific c. Naval Ships' Technical Manuals. d. Manufacturer's Technical Publications e. CALMS/BOSS/MICA		
4.02 State the purpose of the Machinery History file IAW COMDTINST M9000.6 (series), and MLC Standard Operating Procedures (SOP).		
4.03 Interpret Material Safety Data Sheets IAW the MSDS Pocket Dictionary ISBM 0-93169027-7.		
4.04 Identify labels, symbols, and references associated with a hazardous material IAW COMDTINST M16478(series).		
4.05 Identify safety precautions associated with hazardous materials IAW COMDTINST M16478(series), NSTM Chapter 670, and MLC Standard Operating Procedures (SOP).		
4.06 State the purpose of the unit level Hazardous Material Plan IAW COMDTINST M16455.10(series), and COMDTINST M16478(series).		
4.07 Read and interpret engineering blueprints and schematics IAW NAVEDTRA 10077-F1 (0502-LP-214-4600).		
5.01 Verify accuracy of engineering department hazardous materials inventory and Material Safety Data Sheet Files (MSDSF) IAW COMDTINST 6260.21 (series) and COMDTINST M16455.10.		
5.02 Enter approved revisions to engineering publications IAW applicable COMDTNOTEs .		
6.01 Prepare Fuel Oil and Water Report IAW COMDTINST M9000.6(series).		
6.02 Prepare and maintain a JP-5 Log IAW COMDTINST M3710.2 (series), COMDTINST M5000.3(series), and NSTM Chapter 542.		
6.03 Prepare and maintain Machinery History Files IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
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6.04	Review and plan engineering department Preventive Maintenance Schedules (PMS) IAW COMDTINST M9000.6(series).		
6.05	Develop/prepare an amendment/change to a Preventive Maintenance Schedule (PMS) Procedure Card IAW COMDTINST M9000.6 (series) and applicable Preventive Maintenance Manual.		
6.06	Develop Preventive Maintenance Schedule (PMS) requirements for nonstandard/local equipment IAW COMDTINST M9000.6(series), and Manufacture's Technical Manual.		
6.07	Prepare a Current Ships Maintenance Project (CSMP) IAW COMDTINST M9000,6(series), and MLC Standard Operating Procedures (SOP).		
6.08	Prepare Shore Station Maintenance Requests (SSMR) IAW COMDTINST M11000.11(series), and MLC Standard Operating Procedures (SOP).		
6.09	Maintain unit Current Ships Maintenance Project (CSMP) File.IAW COMDTINST M9000.6(series), and MLC Standard Operation Procedures (SOP).		
6.10	Maintain unit Shore Station Maintenance Request (SSMR) File. IAW COMDTINST M11000.1(series), and MLC Standard Operational Procedures (SOP).		
6.11	Prepare Cutter Engineering Report IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
6.12	Maintain engineering technical publications and engineering files IAW COMDTINST M9000.6(series), and applicable COMDTNOTEs.		
6.13	Conduct revisions on unit engineering blue prints and drawings, request formal correction/updates using standard revision practices IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
6.14	<pre>Update unit's boat record IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).</pre>		
6.15	Prepare a Boat Inspection Report (CG-3022) IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
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6.16 Prepare initial, update, correction, and cancel casualty report/message and update file IAW COMDTINST M3501.3(series), NWP 10-1-10, and MLC Standard Operating Procedures (SOP).		
7.01 Conduct an audit of the Tagout Log IAW COMDTINST M9000.6(series).		
7.02 Review unit Heat Stress Management Program for accuracy and currency IAW COMDTINST 6270.17(series), COMDTINST M9000.6 (series), and MLC Standard Operating Procedures (SOP).		
7.03 Prepare a Report of Survey IAW COMDTINST M4500.5(series).		
7.04 Review specifications for a planned work project for ashore and/or afloat IAW COMDTINST M9000.6(series), COMDTINST M11000.11(series), and MLC Standard Operating Procedures (SOP).		
7.05 Conduct quality assurance assessments on a contractor's workmanship IAW COMDTINST M11000.11(series), COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
7.06 Prepare and maintain the Inspector's Report of Daily Operations IAW COMDTINST M11000.10(series), COMDTINST M9000.6 (series), and MLC Standard Operating Procedures (SOP).		
7.07 Prepare an availability work list for drydock and/or dockside availability IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
7.08 Coordinate engineering department duties and unit operational responsibilities IAW COMDTINST M9000.6(series), Unit Instructions, and Unit Engineering Standing Orders.		
7.09 Prepare Drydocking and Underwater Body Paint Report IAW COMDTINST M9000.6(series).		
7.10 Prepare a Boatalt, request.IAW COMDTINST M9000.6(series), and MLC Standard Operating Procedures (SOP).		
7.11 Prepare Shipalt, request. IAW COMDTINST 9000.6(series).		
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B. TRAINING		
5.01 Plan engineering department training IAW COMDTINST M3502.4(series).		
5.02 Conduct engineering department training by developing a lesson plan IAW COMDTINST M3502.4(series). M3502.4(series).		
6.01 Maintain individual and departmental engineering training records IAW COMDTINST M3502.4(series).		
6.02 Research schools and training availability for engineering personnel IAW COMDTINST M3502.4(series) COMDTINST M1500.10 (series), and Manufacturer's available service training.		
6.03 Prepare a Short Term Training Request IAW COMDTINST M1500.10(series).		
6.04 Conduct training on the current environmental regulations governing the operation, maintenance, and repair of air conditioning and refrigeration systems IAW Modern Refrigeration & Air Conditioning Manual (Goodheart & Willcox), 40 CFR Part 82 (Clean Air Act Amendment 1990) Code of federal Regulations, Refrigeration Transition and Recovery Certifications Program for HVACR Technicians Manual.		
6.05 Impose simulated engineering casualties during drills IAW Unit Casualty Control Manual and NSTM Chapter, 079 Volume III.		
7.01 Coordinate, schedule, and supervise engineering departmental training IAW Unit Training Program, and COMDTINST M3502.4 (series).		
7.02 Conduct training on duties and responsibilities of a Board of Survey member IAW COMDTINST M4500.5(series), and COMDTINST M4400.17.		
7.03 Conduct training on the duties and responsibilities of a Personal Property Custodian IAW COMDTINST M4500.5(series).		
7.04 Conduct training on the duties and responsibilities of a Hazardous Material Coordinator IAW COMDTINST M16478.1(series), COMDTINST M6260.21(series), NSTM Chapter 670, and MLC Standard Operating Procedure (SOP).		
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7.05	Conduct training on the duties and responsibilities of a Gas Free Petty Officer IAW COMDTINST M9000.6(series), NSTM Chapter 074 Volume III, and CFR 29 S1915.7 Code of Federal Regulations.		
7.06	Conduct training in confined space entry IAW COMDTINST M9000.6(series) COMDTINST M5100.48, NSTM Chapter 074 Volume III, and CFR 29 S1915.7 Code of Federal Regulations.		
7.07	Plan and conduct the following shipboard damage control drills IAW Unit Engineering Departmental Instructions, Unit Casualty Control Manual, COMDTINST M9000.6(series), COMDTINST M9000.4 (series), and NSTM Chapter 079 Volume III;		
	a. Fireb. Floodingc. Rescue and Assistance		
C. C	OMPUTERS		
4.01	Access SCAMP/CM PLUS data base on a standard CG workstation and retrieve the following information IAW unit administrative procedures and Coast Guard/manufacturer's tutorial and reference guide;		
	 a. Engineering Parts Inventory data b. Engineering PMS data c. Damage Control information d. Technical Publications indices e. Machinery History 		
D. SU	JPPLY		
5.01	<pre>Complete an inventory of consumable and spare parts IAW COMDTINST M4400.19(series).</pre>		
5.02	<pre>Prepare applicable forms for ordering and replenishing materials IAW COMDTINST M4400.19(series).</pre>		
6.01	Maintain departmental spare parts inventory IAW COMDTINST M4400.19(series).		
6.02	Update and maintain unit engineering parts allowance IAW COMDTINST M4400.19(series), and COMDTINST M4441(series).		
6.03	Compare an order for parts and/or supplies received against the procurement document and report discrepancies to supervisor IAW COMDTINST M4400.19(series).		
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7.01 Maintain engineering departmental supply reconnected and necessary forms for ordering and replenis materials IAW, and COMDTINST M4400.19(series).	shing	
7.02 Prepare engineering department budget/Financi Plan Report IAW COMDTINST M9000.6(series), ar Standard Operating Procedures (SOP).		
7.03 Prepare an allowance change request. IAW COMDTINST M4400.19(series).		
7.04 Prepare a Report of Discrepancy Report (ROD) and COMDTINST M4400.19(series).	IAW	
7.05 Conduct training on the duties and responsible of a Personal Property Custodian IAW COMDTINS M4500.5(series).		
E. AIR CONDITIONING AND REFRIGERATION		
4.01 Identify the principles of operation for an a conditioning a refrigeration system IAW NSTM 516, and Modern Refrigeration & Air Condition Manual (Goodheart & Willcox).	Chapter	
5.01 Defrost a refrigeration system IAW Unit Opera Instructions, NSTM Chapter 516, Modern Refrig & Air Conditioning Manual (Goodheart & Willco Manufacturer's Technical Manual.	geration	
5.02 Troubleshoot and repair a heating, ventilation and/or air conditioning (HVAC) air handler un IAW NSTM Chapter 516, and Modern Refrigeration Conditioning Manual (Goodheart & Willcox).	nit	
5.03 Clean the watersides of a water cooled refrigeration/air conditioning condenser IAW Preventive Maintenance Schedule Manual (PMS), Chapter 516, Modern Refrigeration & Air Condi Manual (Goodheart & Willcox), and Manufacture Technical Manual.	tioning	
5.04 Pump down an air conditioning and/or a refrigeral system IAW NSTM Chapter 516, Modern Refrigeral & Air Conditioning Manual (Goodheart & Willcommand Manufacturer's Technical Manual.	ation	
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6.01	Evacuate/recover and recharge a refrigeration/AC system under direct supervision of a certified AC&R technician IAW NSTM Chapter 516, and Modern Refrigeration and Air Conditioning Manual (Goodheart & Willcox).		
6.02	<pre>Inspect and renew a valve in a refrigeration/AC system under direct supervision of a certified AC&R technician IAW NSTM Chapter 516, and Modern Refrigeration & Air Conditioning Manual (Goodheart & Willcox).</pre>		
6.03	Inspect and renew a liquid line dehydrator cartridge in an air conditioning or refrigeration system under direct supervision of a certified AC&R technician IAW NSTM Chapter 516, Modern Refrigeration and Air Conditioning Manual (Goodheart & Willcox).		
7.01	Troubleshoot and recommend corrective actions on a defective air conditioning/refrigeration system IAW NSTM Chapter 516, Modern Refrigeration & Air Conditioning Manual (Goodheart & Willcox), and Manufacturer's Technical Manual.		
F. E	LECTRICAL		
4.01	Fill new starter/storage battery with electrolyte and/or distilled water and charge IAW NSTM Chapter 313, Preventive Maintenance Schedule Manual (PMS).,		
4.02	Check the specific gravity and interpret the readings on a starting/storage battery IAW NSTM Chapter 313, Preventive Maintenance Schedule Manual (PMS).		
4.03	Connect starting/storage batteries for parallel and series operations IAW NSTM Chapter 313, Preventive Maintenance Schedule Manual (PMS).		
4.04	Troubleshoot electrical circuits using a multimeter IAW NSTM Chapter 313, Preventive Maintenance Schedule Manual(PMS Modern Refrigeration and Air Conditioning)(Goodheart & Willcox), and Manufacturer's Operating Instructions.		
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4.05 Identify the following electrical schematic symbols IAW NAVEDTRA 10077(series).		
a. Fuse j. Resistor b. Switch k. Meter c. Breaker l. Diode d. Relay m. Transformer e. Ground f. Battery g. Lamps h. Generator i. Motor		
5.01 Place on line, unit power generation system IAW Unit Operating Instructions, NSTM Chapters 300, 310, 320, and Manufacturer's Technical Manual.		
5.02 Troubleshoot and repair electrical power distribution system. IAW Preventive Maintenance Schedule, Manufacturer's Technical Manuals and NSTM Chapter 3.		
5.03 Troubleshoot/Renew the electrical starter on an engine IAW Preventive Maintenance Schedule, and Manufacturer's Technical Manuals.		
6.01 Troubleshoot , and recommend corrective actions to the following IAW applicable Naval Engineering Drawings, Technical Publication Drawings, and Manufacturer's Technical Manuals;		
a. Alternator/generator systemb. Engine alarm systemc. Bilge alarm systemd. Fire detection systeme. Starting systems		
G. FIREFIGHTING AND DEWATERING PUMPS		
4.01 Identify the principals of operation of a centrifugal pump IAW NSTM Chapter 503.		
4.02 Align a pump coupling and shaft IAW NSTM Chapter 503, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
5.01 Troubleshoot and make repairs to a defective standard CG portable firefighting pump IAW NAVSEAS S6225-BW-MM0-010, and Manufacturer's Technical Manual.		
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	Troubleshoot and make repairs to a defective standard CG portable dewatering pump IAW COMDTINST M10470.10(series), Manufacturer's Technical Manual.		
	Troubleshoot and make repairs to a defective fixed firefighting pump IAW NSTM Chapter 503, and Manufacturers Technical Manual.		
H VAL	VES		
	Identify the principals of operation and use for the following valves IAW NSTM Chapter 505;		
	a. Check b. Butterfly c. Gate d. Globe e. Needle f. Ball g. Petcock h. Pressure regulating i. Relief j. Temperature controlled/regulating k. Thermostatic		
	Hydrostatically test a valve IAW COMDTINST M9000.6(series), NSTM Chapter 505, MLC Standard Specifications, and MIL-STD-777.		
	Conduct maintenance on the following valves by inspecting, checking, and adjusting IAW COMDTINST M9000.6(series), NSTM Chapter 505, Preventive Maintenance Schedule Manual (PMS), MLC Standard Specifications, MIL-STD-777, and Manufacturer's Instructions;		
	a. Pressure regulatingb. Reliefc. Temperature controlled/regulatingd. Thermostatic		
I TUB	ING, PIPING, AND HOSES		
	Describe how tubing is sized by identifying tubing size for a given task and selecting the proper fittings IAW NSTM Chapter 505, Modern Refrigeration & Air Conditioning (Goodheart & Willcox) and Vickers Industrial Hydraulic- Manual.		
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4.02 Conduct installation and repair on a tubing system by cutting and bending tubing using single/double flare tubing IAW Chapter 505, Modern Refrigeration & Air Conditioning (Goodheart & Wilcox) and Vickers Industrial Hydraulics Manual.		
4.03 Describe how piping is sized by identifying piping size for a given task and selecting the proper fittings IAW NSTM Chapter 505, Modern Refrigeration & Air Conditioning (Goodheart & Willcox) and Vickers Industrial Hydraulics Manual.		
4.04 Install fittings using a thread sealant IAW NSTM Chapter 505, Modern Refrigeration & Air Conditioning (Goodheart & Willcox) and Vickers Industrial Hydraulics Manual.		
4.05 Identify and inspect various flexible hose material types and select the proper use for each IAW NSTM Chapter 556/505, Fluid Power Basics Bulletin 0239-B1 (Parker Motion and Control), Aeroquip Global Products Bulletin JA131, Vickers Industrial Hydraulics Manual, Preventive Maintenance Schedule Manual (PMS), COMDTINST M9000.6 (series) and Manufacturer Technical Manual.		
4.06 Install flange shielding to a piping system using proper tools and materials IAW COMDTINST M9000.6 (series), and NSTM Chapter 505.		
4.07 Interpret piping system color codes IAW COMDTINST M10360.3 (series).		
J. AUXILIARY EQUIPMENT		
4.01 Identify the principals of operation for the following auxiliary machinery IAW NSTM Chapters 531, Vol III, 533, 581, 562, 565, 581, 582, 589, 593, 9340, and Manufacturer's Technical Manuals;		
 a. Air compressor (NSTM 551) b. Incinerator (NSTM 593) c. Fin stabilizer (NSTM 565) d. Vacuum sewage system (NSTM 593) Manufacturer's Technical Manual. 		
5.01 Maintain potable water tanks and/or system by conducting required treatments and testing IAW COMDTINST M5100.47, and NSTM Chapter 533.		
5.02 Troubleshoot and repair deck machinery IAW COMDTINST M9000.6 (series), NSTM Chapter 581, 582, 589, and Manufacturer's Technical Manual		
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NSTM Chapters 655 Manuals; a. Dishwasher/Sa b. Washer c. Dryer			
systems IAW Chapt 555, 562, 565, 59	repair the following auxiliary ers 503, 510, 531, Volume III, 551, 3, Preventive Maintenance Manuals, s Technical Manuals;		
a. Pneumatic sysb. Ventilation soc. Sewage system d. Steering system e. Fixed/portabl	system (NSTM 510) n (NSTM 593)		
each of the follo Chapters 503, 510	recommend corrective action for owing auxiliary systems IAW NSTM , 531 Volume III, 551, 555, 562, aufacturer's Technical Manuals;		
b. Ventilation s c. Sewage system d. Steering syst	n (NSTM 592)		
K. BOILERS, EVAPORATORS	AND WASTE HEAT EQUIPMENT		
equipment IAW NST III, 593, Coast G Coast Guard TP-54	ncipals of operation for the following TM Chapters 220, 221, 233, 531 Volume Guard TP-2670, Coast Guard TP-541-0200 II-0101, and NAVSEA 0951-LP-031-0100 s Technical Manual;		
c. Waste heat re e. Reverse osmos	221) ISTM 531 Volume III) ecovery system (NSTM 233) sis (NSTM 531 Vol III) cation (NSTM 531, 533)		
leaks IAW NSTM Ch	distilling plant for steam and vacuum apter 531 Volume I, Coast Guard facturer's Technical Manual.		
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k (Inspect the following components on an auxiliary poiler and adjust/repair/replace the component IAW Chapter 221, Preventive Maintenance Schedule Manual (PMS), Manufacturer's Technical Manual.		
	a. Diffuser b. Blower assemblies c. Fuel pump d. Electrodes e. Fuel nozzles f. Flame detector ring g. Hand hole covers and gaskets		
5.03 C	n. Photoelectric eye Clean boiler water sides on an auxiliary boiler IAW NSTM Chapter 221, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
N	Clean boiler fire sides on an auxiliary boiler IAW NSTM Chapter 221, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
	Inspect an evaporator and repair/replace defective components IAW NSTM Chapter 531 Volume I, Coast Guard TP-2670, and Manufacturer's Technical Manual.		
M	Chemically treat evaporator feed water IAW COMDTINST M9000.6 (series), NSTM Chapter 531 Vol I, Coast Guard TP-2670, Preventive Maintenance Schedule Manual(PMS), and Manufacturer's Technical Manual.		
N.	Troubleshoot and repair a reverse osmosis system IAW NSTM Chapter 5310 Volume III and Manufacturer's Technical Manuals		
k	Conduct setting of safety devices on auxiliary poilers IAW NSTM Chapters 221, 505, and Preventive Maintenance Schedule Manual (PMS).		
[Monitor and adjust all water level controls, firing controls and safety controls on an auxiliary boiler IAW NSTM Chapters 220, 221, and Manufacturer's rechnical Manual.		
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6.03 Troubleshoot and recommend corrective repairs for each equipment and/or system IAW NSTM Chapters 221, 531 Vol I, NavSea 0951-LP-031-0010, and Manufacturer's Technical Manual;		
a. Auxiliary boilerb. Evaporatorc. Waste heat recovery systemd. Reverse osmosis system		
7.01 Clean and inspect distilling plant flash chambers and shells for cracks IAW NSTM Chapter 531 Vol I, and Manufacturer's Technical Manual.		
7.02 Chemically clean distilling plant to remove scale buildup, inspect and recommend any additional corrective action IAW COMDTINST M9000.6(series), NSTM Chapter 531 Vol I, Coast Guard TP-2670, and Technical Manual.		
L. OILY WATER SEPARATORS		
4.01 Identify the principals of operation for an oily water separator (OWS) IAW NSTM Chapter 593, Preventive Maintenance Schedule Manual., Manufacturer's Technical Manual.		
4.02 Maintain an OWS IAW NSTM Chapter 593, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
5.01 Troubleshoot and repair an OWS IAW Manufacturer's Technical Manual.		
6.01 Troubleshoot and recommend corrective repairs for an OWS unit/system IAW Coast Guard TP-541-0200, Coast Guard TP-0101, and Manufacturer's Technical Manual.		
M. LUBE OIL, FUEL OIL, AND JP-5 FUEL SYSTEMS		
4.01 Identify principals of operation of a lube oil purifier.		
4.02 Conduct lube oil viscosity tests using a visgauge or falling ball comparator IAW COMDTINST 9000.6(series), and NSTM Chapter 262, and Manufacturer's Technical Manual.		
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by inspec defective Schedule	maintenance on a fuel/oil purification system cting, repairing/renewing and adjusting e components IAW Preventive Maintenance Manual, NSTM Chapters 262, 541, 542, and urer's Technical Manual.		
inspectir defective	maintenance on a fuel/oil transfer system by ng, repairing/renewing, and adjusting e components IAW NSTM Chapters 262, 541, 542, facturer's Technical Manual.		
COMDTINST	water and sediment test on JP-5 fuel IAW I M9000.6 (series), Preventive Maintenance Manual (PMS), and NSTM Chapter 542.		
M9000.6	h a shipboard oil storage system IAW COMDTINST (series), Unit Operating Instructions, Unit ing Standing Orders, and NSTM Chapter 262.		
shipboard (series) Instructi	, supervise , and monitor an internal d fuel/oil transfer IAW COMDTINST M9000.6 COMDTINST M3710.3(series), Unit Operating ions, Unit Engineering Standing Orders, and pters 541, 542.		
spectro-a M9000.6(s	and submit a lube oil sample for analysis testing IAW COMDTINST series) and MLC Standard Operating es (SOP).		
results, IAW COMD	t viscosity and spectro-anaylsis test and determine corrective actions as required TINST M9000.6 (series), NSTM Chapter 262, facturer's Technical Manual.		
detail I <i>I</i>	, supervise , and monitor a shipboard fueling AW Unit Operating Instructions, Unit ing Standing Orders, and NSTM Chapters		
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N. BEARINGS AND SEALS		
4.01 Identify the principals of operation for the following bearings IAW NSTM Chapter 2430, and 9430; a. Ball b. Roller c. Precision insert d. Needle		
4.02 Identify the principals of operation for commonly used gaskets, packing, and seals IAW NSTM Chapters 078 Vol I, 244, and 9430.		
4.03 Troubleshoot and renew defective gaskets, packing, and seals IAW NSTM Chapter 078 Vol I.		
5.01 Troubleshoot and renew the following defective bearings IAW NSTM Chapters 244, and 9430;		
a. Ballb. Rollerc. Needled. Babbit/bushing		
6.01 Supervise the renewal of defective bearings IAW NSTM Chapters 233, 244, 9430, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
6.02 Inspect and adjust/renew thrust bearings and collars IAW NSTM Chapters 244, 9430, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
O. MECHANICAL SKILLS		
4.01 Maintain strainers and filters in the following systems IAW NSTM Chapters 505, 551, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's technical Manual;		
a. Fuel (NSTM 505) b. Oil (NSTM 505)		
4.02 Conduct a brazing/silver soldering task IAW NSTM Chapters 074 Vol I, 505, 516, and Modern Refrigeration & Air Conditioning (Goodheart & Willcox).		
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4.03	Conduct a soft soldering task IAW NSTM 505, 516, 074 Vol 1 and Modern Refrigeration & Air Conditioning (Goodheart & Willcox).		
4.04	Conduct various engineering task using the following hand tools, and measuring instruments IAW NAVEDTRA 10082-B2 (Tools and Their Uses), and Navy Technical Manual M6290-A-J-MAN-010 (Use and Care of Hand tools and Measuring Tools); a. Inside and outside micrometers b. Dial indicators c. Inside and outside calipers d. Taps, dies, and thread files e. Piston ring expander f. Drill Press g. Easy Outs h. Gauges; depth feeler, go/no-go, telescoping i. Helicoil kit (NSTM 075) j. Personal protection equipment (PPE) (NSTM 077) k. Puller kit (bearing and gear) l. Hand tachometer m. Snap ring pliers n. Machinist's Rule o. Torque Wrench		
4.05	Renew shaft packing on a fixed and/or portable pump IAW COMDTINST M10470.10(series), NSTM Chapters 244, 555, and Manufacturer's Technical Manual.		
4.06	Fabricate a gasket and o-ring using proper tools and procedures IAW NSTM Chapter 078 Vol I.		
4.07	Cut and install a sight glass using proper tools and procedures IAW NSTM Chapter 221.		
4.08	Identify the principles of operations for the following gauges IAW NSTM Chapter 504, Modern Refrigeration & Air Conditioning (Goodheart & Willcox and Vickers Industrial Hydraulics Manual; a. Temperature b. Duplex c. Compound d. Vacuum e. Manometer		
5.01	Separate and install parts using a hydraulic/arbor press and/or portable hydraulic jack/press IAW Unit Operating Instructions, and Manufacturer's Technical Manual.		
6.01	Conduct a hydrostatic test IAW COMDTINST M9000.6(series), NSTM Chapter 221, and MLC Standard Operation Procedures (SOP)/Standard Specifications.		
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6.02 Plug a defective heat exchanger tube IAW COMDTINST M9000.6(series), NSTM Chapter 254, and MLC Standard Operation Procedure (SOP)/Standard Specifications.		
P. HYDRAULICS		
4.01 Identify the principals of operation for a hydraulic system IAW NSTM Chapter 556, Vickers Industrial Hydraulics Manual, and Industrial Fluid Power Volume 1 (Womack Education).		
4.02 Identify the principals of operation for the following hydraulic components IAW NSTM Chapter 556, and Vickers Industrial Hydraulics Manual; a. Reservoirs (open & pressurized) b. Pumps (vane, piston, & gear types) c. Motors (vane, piston, & gear types) d. Cylinders (single & double acting) e. Control valves (directional control and pressure control)		
4.03 Identify the basic hydraulic component symbols IAW Vickers Industrial Hydraulics Manual, and Industrial Fluid Power Volume 1 (Womack Education).		
5.01 Conduct maintenance on a hydraulic oil system by changing and adding oil, and bleeding air IAW COMDTINST M9000.6(series), NSTM Chapter 556, Vickers Industrial Hydraulics Manual, Industrial Hydraulics Technology Bulletin 0232-B1 (Parker Motion and Control), Preventive Maintenance Schedule Manual (PMS) and Manufacturer's Technical Manual.		
5.02 Draw a hydraulic oil sample for the purpose of spectro-anaylsis testing IAW COMDTINST M9000.6(series) NSTM Chapter 556, and Preventive Maintenance Schedule Manual (PMS).		
6.01 Troubleshoot and renew a positive displacement hydraulic pump IAW NSTM Chapter 556, and Manufacturer's Technical Manual.		
6.02 Troubleshoot and repair/renew a directional control valve IAW NSTM Chapter 556 and Manufacturer's Technical Manual.		
6.03 Conduct an operational test on a directional control valve IAW NSTM Chapter 556, and Manufacturer's Technical Manual.		
6.04 Troubleshoot and repair a hydraulic cylinder IAW NSTM Chapter 556, and Manufacturer's Technical Manual.		
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RATIN	G: Machinery Technician	INIT	DATE
6.05	Conduct an operational test on a hydraulic cylinder IAW NSTM 556, and Manufacturer's Technical Manual.		
6.06	Troubleshoot and repair/renew a hydraulic motor IAW NSTM Chapter 556, and Manufacturer's Technical Manual.		
6.07	Conduct an operational test on a hydraulic motor IAW NSTM Chapter 556, and Manufacturer's Technical Manual.		
6.08	Prepare a hydraulic oil sample for spectro-analysis testing IAW COMDTINST M9000.6(series), NSTM Chapter 556, and Preventive Maintenance Schedule Manual.		
7.01	Interpret hydraulic oil spectro-anaylsis test results, and determine corrective actions as required IAW COMDTINST M9000.6 (series), NSTM Chapter 556, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
Q. W	ATCHSTANDING		
4.01	State the purpose of the Engineering Standing Orders IAW COMDTINST M9000.6(series).		
4.02	State the purpose of the Engineering Officers Night Order Book IAW COMDTINST M9000.6(series).		
4.03	Conduct corrective actions for casualty control drills IAW COMDTINST M9000.6(series), COMDTINST M16114.6(series), NSTM Chapter 079 Volume III and Unit Casualty Control Manual.		
6.01	Supervise an engineering watch station IAW Unit Instructions, Engineering Officer Standing Orders, COMDTINST M9000.6(series), and NSTM Chapter 079 Volume III.		
6.02	Direct and coordinate an engineering duty section IAW Unit Instructions, Engineering Officer Standing Orders, and NSTM Chapter 079 Volume III.		
6.03	Review operating parameters on unit engineering logs IAW Unit Instructions, Engineering Officer Standing Orders, COMDTINST M9000.6(series), and Manufacturer's Technical Manual.		
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RATIN	G: Machinery Technician	INIT	DATE
6.04	Evaluate and qualify an engineering watchstander IAW Unit Instructions, Engineering Officer Standing Orders, applicable PQS Manual, COMDTINST M9000.6(series), and NSTM Chapter 079 Volume III.		
R. OUT	TBOARDS, INBOARD/OUTBOARDS AND OUTDRIVES		
4.01	<pre>Identify the principals of operation for the following IAW, Manufacturer's Technical/Service Manuals; a. Outboard engine b. Outdrive unit</pre>		
4.02	Conduct basic maintenance on an outboard engine IAW Preventive Maintenance Schedule manual (PMS), and Manufacturer's Technical/Service Manual.		
5.01	Change-out an outboard engine on a small boat IAW Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical/Service Manual.		
5.02	Troubleshoot/Renew a defective hydraulic power trim unit IAW the Manufacturer's Technical/Service Manual.		
5.03	Conduct a tune-up on an outboard engine (gas and/or diesel) IAW Preventive Maintenance Schedule manual (PMS), and Manufacturer's Technical/Service Manual.		
S. I	NTERNAL COMBUSTION ENGINES		
4.01	Identify the principals of operation for the following internal combustion engines IAW NSTM Chapters 233, 234 and Manufacturer's Technical Manuals;		
	a. Gasoline engine (2 & 4 stroke)b. Diesel engine (2 & 4 stroke)c. Gas turbine		
4.02	Disassemble/assemble an internal combustion engine under direct supervision IAW Manufacturer's technical Manual.		
4.03	<pre>Inspect the components of an internal combustion engine and the engine under direct supervision IAW COMDTINST M9000.6 (series), NSTM Chapters 233, 234 and Manufacturer's Technical Manual.</pre>		
NAME	(Last, First, Middle Initial)	SOCIA	ITY NO.

RATING	G: Machinery Technician	INIT	DATE
4.04	Conduct a tune-up of a diesel engine under direct supervision IAW Manufacturer's Technical Manual.		
5.01	Operate a main propulsion diesel engine by lining up, starting, monitoring, and securing IAW Unit Operating Instructions, and Manufacturer's Technical Manual.		
5.02	Take and record required engine performance readings IAW COMDTINST M9000.6(series), Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
5.03	Check condition of diesel engine mounts IAW Preventive Maintenance Schedule (PMS), and Manufacturer's Technical Manual.		
6.01	Supervise the disassembly and assembly of an internal combustion engine IAW Manufacturer's Technical Manual.		
6.02	Take and record crankweb deflection and thrust readings IAW COMDTINST M9000.6(series), NSTM Chapter 233, Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
6.03	Adjust mechanical, hydraulic governors, and overspeed trips on a diesel engine IAW Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
6.04	Troubleshoot and recommend corrective actions to repair a defective internal combustion engine IAW COMDTINST M9000.6 (series), NSTM Chapters 233, 234, and Manufacturer's Technical Manual.		
6.05	Conduct maintenance on an internal combustion engine by removing, inspecting, and replacing/ repairing major engine components IAW Preventive Maintenance Schedule Manual(PMS), NSTM Chapters 233, 234, and Manufacturer's Technical Manuals.		
7.01	Graph engine/gas turbine performance readings, interpret and analyze data to determine maintenance requirement IAW COMDTINST M9000.6 (series), Preventive Maintenance Schedule Manual (PMS), NSTM Chapters 233, 234, and Manufacturer's Technical Manual.		
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RATING	G: Machinery Technician	INIT	DATE
T. TUE	RBINE		
7.01	Conduct maintenance on a gas turbine engine IAW Preventive Maintenance Schedule Manual (PMS) and Manufacturer's Technical Manual.		
8.01	Conduct performance test on a gas turbine engine IAW NSTM Chapter 234, Preventive Maintenance Schedule Manual (PMS), COMDTINST M9000.6 (series) and Manufacturer's Technical Manual.		
8.02	Conduct borescope inspection on a gas turbine IAW NSTM Chapter 234, Preventive Maintenance Schedule Manual (PMS) and Manufacturer's Technical Manual.		
8.03	Conduct hot section inspection on a gas turbine engine IAW Preventive Maintenance Schedule Manual (PMS) and Manufacturer's Technical Manual.		
8.04	Test overspeed trips on a gas turbine engine IAW Preventive Maintenance Schedule Manual (PMS), and Manufacturer's Technical Manual.		
U. ME	ECHANICAL POWER TRANSMISSION EQUIPMENT		
4.01	<pre>Identify the principals of operation for the following systems IAW NSTM Chapters 562, 583, 9420, and Manufacturer's Technical Manual; a. Reduction gears on small boats and cutters b. Pneumatic, fluid, and mechanical clutches and clutch packs. c. Controllable pitch propellers d. Electric, hydraulic, and mechanical steering</pre>		
4.02	<pre>Inspect and adjust shaft packing IAW NSTM Chapters 244, 9430, Preventive Maintenance Schedule Manual(PMS), and Manufacturer's Technical Manual.</pre>		
4.03	Identify packing size and pack a packing gland IAW Applicable Naval Engineering Drawings, NSTM Chapters 244, 9430, and Manufacturer's Technical Manual.		
6.01	Check engine and propulsion shaft alignment and align as necessary IAW NSTM Chapters 244, 9430 and applicable Naval Engineering Drawings.		
6.02	Conduct maintenance on main propulsion equipment by removing, inspecting, and replacing/repairing defective components IAW Preventive Maintenance Schedule Manual(PMS) and Manufacturer's Technical Manual.		
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RATING: Machinery Technician	II	NIT	DATE
6.03 Conduct maintenance on pneumatic conduct packs by inspecting, cleaning IAW Preventive Maintenance Schedule (PMS), and Manufacturer's Technical	ng, and adjusting e Manual		
6.04 Conduct maintenance on pressure pladisks by disassembling, inspecting or replacing IAW Preventive Mainten Manual (PMS), and Manufacturer's Telephone	and adjusting nance Schedule		
6.05 Conduct maintenance on a strut bear clearances, removing, inspecting, a NSTM Chapters 244, 9430, Preventive Schedule Manual (PMS) and Manufactumanual.	and renewing IAW Maintenance		
6.06 Conduct a propeller inspection by, measurements and recording IAW COMM (series) NSTM Chapter 245, and apple Engineering Drawings.	DTINST M9000.6		
6.07 Conduct a shaft inspection by taking measurements, and recording IAW COM M9000.6(SERIES), NavSea Technical M010, NavSea Technical Manual 0900-Chapters 244, 9430, and applicable Drawings.	IDTINST Manual 0919-LP-008- ·LP-014-1010, NSTM		
6.08 Conduct a rudder inspection by take measurements, and recording finding 244, 562, 9430 Preventive Maintenar (PMS), and Manufacturer's.	gs IAW NSTM Chapters		
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